From the Guest Editor

INVASIVE SPECIES MANAGEMENT: ARE WE DOING ENOUGH?

Inspiration for this special issue of *Park Science* came from discussions among participants in a workshop to develop guidelines for inventory and monitoring of invasive plants held in Ft. Collins, Colorado, in June 2002. As Lloyd Loope states in the cover article, "Given the seeds of catastrophic loss already planted and those yet to come, invasive species pose a highly significant threat to the biodiversity of the U.S. National Park System in the early decades of the 21st century." The purpose of this issue is to communicate the breadth and depth of the invasive species issue, to document impacts, and to report what has and is being done by the National Park Service and its partners to control this "biological wildfire." This edition also serves as a springboard to discuss the role of the National Park Service in this global issue and to plot a course of action for the future. All articles were solicited to assure that a cross-section of invasive taxa was addressed and that impacts to terrestrial, aquatic, and marine systems were considered.

The cover article by Loope, the "biological wildfire" piece by Tom Stohlgren, and the books reviewed by Pamela Benjamin and Neil Cobb document increasing biological invasions resulting from a breakdown of natural geographical barriers in an age of globalization. They sound the clarion for coordinated efforts in research, education, prevention, control, and restoration that must be components of any action plan to preserve the biodiversity in the National Park System. The NPS Organic Act implies that a key mission of the Service is to protect biodiversity. As Pam Benjamin and I state in our article, we need to place more effort on assessing the distribution, abundance, and impacts of invasive species in the national parks. More importantly, in my opinion, we need to identify those areas of high ecological value that are relatively free of exotic invasives, and make heroic efforts to keep them that way.

Recognition of invasive species as a problem in the National Park System is far from new as Linda Drees, my coeditor for this issue, points out. George Wright noted the negative impacts of nonnative species in the 1930s. Policy against introductions of exotics and control of existing exotics in natural zones dates back to the 1960s. The documentation of resource impacts of feral pigs and brook trout in the Great Smoky Mountains and burros in the Grand Canyon were some of my first exposure to the invasive species issue. Articles in this special issue exemplify the disruption of soils, forests, and wildlife caused by invasive species, and their deleterious effects on marine, aquatic, and terrestrial systems. Kathryn McEachern illustrates the amplitude of impacts of introduced exotics on entire ecosystems. Kyle Merriam and his coauthors investigate how fire management may catalyze exotic plant invasions in some ecosystems.

We certainly have big problems, but we also have some success stories to share. An ambitious program to prevent zebra mussels from migrating into the upper reaches of the St. Croix River has helped preserve the 40 or more species of freshwater mussels in that system. The African oryx has been removed from White Sands National Monument. Leafy spurge is under control as a result of an integrated control program in the Little Missouri River watershed, including Theodore Roosevelt National Park. The National Park Service now has an invasive species coordinator and targeted funding for invasive species management. Exotic Plant Management Teams have treated more than 73,000 infested acres in and around parks.

Are we doing enough? Linda Drees, NPS invasive species coordinator, states that "management of invasive species is in our grasp." I appreciate her optimism, as optimism, good science, adequate funding, and hard work will help us manage invasive species. But we must do more. Battling the likely largest threat to the biodiversity of the National Park System is not a collateral duty.

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Editor's Note: Park Science accepts proposals for the development of thematic issues, like this one, to be coordinated by a guest editor. Contact editor Jeff Selleck for further information.